

1   **WE CLAIM:**

1    1.     A spindle motor for use in a disk drive having a rotatable head stack assembly, the spindle  
2   motor comprising:

3               a spindle motor hub having an axis of rotation;

4               a magnet radially attached about the spindle motor hub; and

5               a spindle motor stator including:

6                     a stator rim; and

7                     a plurality of stator teeth arrayed about and internally extending from the

8               stator rim towards the axis of rotation, the stator teeth being sized to fit about the

9               magnet in operable communication therewith for rotating the spindle motor hub,

10              two respective ones of the stator teeth being spaced apart along the stator rim to

11              allow the head stack assembly to pivot between the two respective ones of the stator

12              teeth.

1 2. The spindle motor of Claim 1 wherein the stator teeth are evenly spaced apart along the  
2 stator rim.

1 3. The spindle motor of Claim 1 wherein the stator teeth are symmetrically arrayed about an  
2 axis bisecting the stator rim between the spaced apart two respective ones of the stator teeth.

1 4. The spindle motor of Claim 1 wherein the stator rim is formed of multiple segments.

1 5. The spindle motor of Claim 1 further comprises a magnetic shield between the spaced  
2 apart two respective ones of the stator teeth adjacent the magnet for shielding the head stack  
3 assembly from the magnet.

1 6. The spindle motor of Claim 5 wherein the magnetic shield has two radial portions  
2 extending from adjacent the magnet towards the stator rim respectively adjacent each of the  
3 spaced apart two respective ones of the stator teeth for shielding the head stack assembly from  
4 the spaced apart two respective ones of the stator teeth.

1 7. A spindle motor for use in a disk drive having a rotatable head stack assembly, the  
2 spindle motor comprising:

3 a spindle motor hub;

4 a magnet radially attached about the spindle motor hub; and

5 a spindle motor stator including:

6 a stator rim;

7 a plurality of wound stator teeth arrayed about and internally extending  
8 from the stator rim, windings being formed about the wound stator teeth, the  
9 wound stator teeth being sized to fit about the magnet in operable communication  
10 therewith for rotating the spindle motor hub; and

11 at least one bare stator tooth internally extending from the stator rim  
12 between two respective ones of the wound stator teeth, the at least one bare stator  
13 tooth being positionable adjacent the head stack assembly for allowing the head  
14 stack assembly to pivot over the at least one bare stator tooth.

1 8. A spindle motor for use in a disk drive having a rotatable head stack assembly, the  
2 spindle motor comprising:

3 a spindle motor hub;

4 a magnet radially attached about the spindle motor hub; and

5 a spindle motor stator including:

6 a stator rim;

7 a plurality of wound stator teeth arrayed about and internally extending from

8 the stator rim, windings being formed about the wound stator teeth, the wound stator

9 teeth being sized to fit about the magnet in operable communication therewith for

10 rotating the spindle motor hub, at least one of the wound stator teeth being a reduced

11 winding height stator tooth, windings being formed about the reduced winding

12 height stator tooth to a winding height less than that of a remainder of the wound

13 stator teeth, the reduced winding height stator tooth being positionable adjacent the

14 head stack assembly for allowing the head stack assembly to pivot over the reduced

15 winding height stator tooth.

1 9. A disk drive comprising:

2 a disk drive base;

3 a head stack assembly rotatably attached to the disk drive base; and

4 a spindle motor attached to the disk drive base including:

5 a spindle motor hub having an axis of rotation;

6 a magnet radially attached about the spindle motor hub; and

7 a spindle motor stator including:

8 a stator rim; and

9 a plurality of stator teeth arrayed about and internally extending from

10 the stator rim towards the axis of rotation, the stator teeth being sized to fit

11 about the magnet in operable communication therewith for rotating the

12 spindle motor hub, two respective ones of the stator teeth being spaced apart

13 along the stator rim to allow the head stack assembly to pivot between the

14 two respective ones of the stator teeth.

1 10. The disk drive of Claim 9 wherein the stator teeth are evenly spaced apart along the stator  
2 rim.

1 11. The disk drive of Claim 9 wherein the stator teeth are symmetrically arrayed about an axis  
2 bisecting the stator rim between the spaced apart two respective ones of the stator teeth.

1 12. The disk drive of Claim 9 wherein the stator rim is formed of multiple segments.

1 13. The disk drive of Claim 9 further comprises a magnetic shield between the spaced apart  
2 two respective ones of the stator teeth adjacent the magnet for shielding the head stack assembly  
3 from the magnet.

1 14. The disk drive of Claim 13 wherein the magnetic shield has two radial portions extending  
2 from adjacent the magnet towards the stator rim respectively adjacent each of the spaced apart two  
3 respective ones of the stator teeth for shielding the head stack assembly from the spaced apart two  
4 respective ones of the stator teeth.

1 15. A disk drive comprising:

2 a disk drive base;

3 a head stack assembly rotatably attached to the disk drive base; and

4 a spindle motor attached to the disk drive base including:

5 a spindle motor hub;

6 a magnet radially attached about the spindle motor hub; and

7 a spindle motor including:

8 a stator rim;

9 a plurality of wound stator teeth arrayed about and internally

10 extending from the stator rim, windings being formed about the wound

11 stator teeth, the wound stator teeth being sized to fit about the magnet in

12 operable communication therewith for rotating the spindle motor hub; and

13 at least one bare stator tooth internally extending from the stator

14 rim between two respective ones of the wound stator teeth, the at least one

15 bare stator tooth being positionable adjacent the head stack assembly for

16 allowing the head stack assembly to pivot over the at least one bare stator

17 tooth.

1 16. A disk drive comprising:

2 a disk drive base;

3 a head stack assembly rotatably attached to the disk drive base; and

4 a spindle motor attached to the disk drive base including:

5 a spindle motor hub;

6 a magnet radially attached about the spindle motor hub; and

7 a spindle motor stator including:

8 a stator rim;

9 a plurality of wound stator teeth arrayed about and internally

10 extending from the stator rim, windings being formed about the wound

11 stator teeth, the wound stator teeth being sized to fit about the magnet in

12 operable communication therewith for rotating the spindle motor hub, at

13 least one of the wound stator teeth being a reduced winding height stator

14 tooth, windings being formed about the reduced winding height stator tooth

15 to a winding height less than that of a remainder of the wound stator teeth,

16 the reduced winding height stator tooth being positionable adjacent the head

17 stack assembly for allowing the head stack assembly to pivot over the

18 reduced winding height stator tooth.